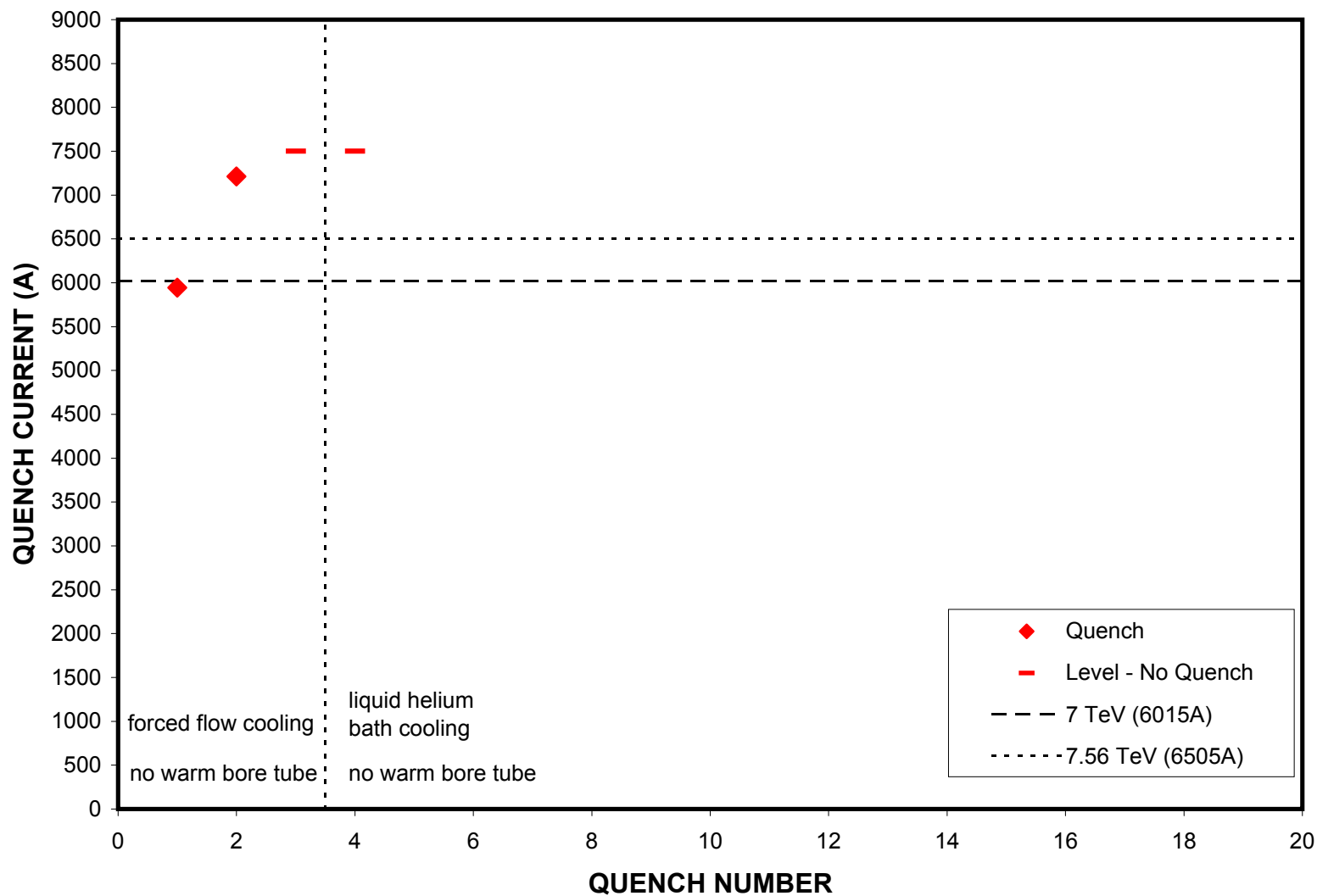


D2L102 QUENCH TESTS



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D2L102 QUENCH SUMMARY

Magcool Bay C

QUENCH #	RUN #	CURRENT (A)	T1 (K)	T4 (K)	START (ms)	MIITS	COIL	COMMENTS
T = 4.5K (nom)								
No warm bore tube								
Forced flow cooling @ 12atm								
1	11	5944	4.474	5.261	-56	9.8	lower right	4:30pm 4-Jun
2	13	7213	4.431	5.168	-20	9.8	lower left	9:00am 5-Jun
*	14	7500	4.433	5.180	no quench		(h)	1:30pm 5-Jun
	strip heater quench at 7500A				2:00pm 5-Jun			
Liquid helium bath cooling @ 1.4atm								
*	16	7500	4.707	4.685	no quench		(j)	4:30pm 6-Jun
	strip heater quench at 6600A				9:00am 7-Jun			
*	19	7500	4.692	4.676	no quench		(k)	1:00pm 7-Jun
	strip heater quench at 7500A				3:00pm 7-Jun			

Notes:

- Ramp rate for quenches was 20A/s.
- Energy extraction used: 35mohms for Quenches #1,2. 50mohms for the first strip heater quench at 7500A and the next one at 6600A. Then the resistance was changed back to 35mohms.
- The temperature T4 is a diode sensor located in the helium return line tube which contains the superconducting bus; T1 is in the lower lead interconnect pot. Both have associated redundant sensors.
- There were no auxiliary voltage taps in the magnet coils.
- Data acquisition sampling rate was 1kHz for all quenches (including strip heater quenches and shutoffs).
- Strip heaters were fired at 475V (nom) and 96A (nom), with 1ms delay.
- For Quench #1, small precursor spike observed at quench start. For Quench #2, precursor spikes were observed at other times before quench start.
- For Run #14, the magnet reached 7500A without quench. It was then kept at 7500A for about 35 min when a malfunction in the SCR switch or SCR fault switch turned off the power supply. This in turn tripped the Idot quench detector, which fired the strip heaters and quenched the magnet 80ms later.

Miits was 5.0. The magnet did not quench on its own.

- j) For Run #16, the magnet reached 7500A and was maintained for about 7 min without quench.
- k) For Run #19, after an earlier strip heater quench at 6600A, the magnet was ramped to 7500A for 5 cycles and then maintained at 7500A for about 30 min when the same malfunction as earlier (Run #14) in the SCR switch turned off the power supply and fired the strip heaters and quenched the magnet. Miits was 4.6. The magnet did not quench on its own.

Due to a communications malfunction (Tektronix bucket?), we were not able to control the power supply and this is what caused the length of time at 7500A that led to the SCR failure. In addition, the pc that controls the upstairs loggers hung and there was no data available from loggers 2-5 for this run.